ABSTRACT OF THE DISCLOSURE

A delivery system for a stent includes a catheter having an elongated inner member and at least one flexible, longitudinally oriented outer member that is operably attached to the distal portion of the inner member. A stent is placed concentrically around the flexible outer member, near the distal end of the catheter. When the elongated inner member is retracted, the flexible outer member folds longitudinally adjacent to the lumen of the stent causing the stent to be deployed. Another aspect according to the invention provides a method for delivering a stent to a treatment site within the vascular system.